

# PATENT SPECIFICATION

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## (54) SPRING BIASED HINGES

(71) I, WILHELM GRONBACH, of German nationality, of 73 Dr. Fritz-Huber-Strasse, 809 Wasserburg/Inn, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to spring biased hinges and particularly, though not exclusively, to such hinges suitable for use in mounting pivotably openable lids of freezer cabinets.

According to the invention, there is provided a spring biased hinge for the weight compensation of a flap, lid or the like which is pivotable on a container about a horizontal axis, comprising first and second hinge members pivotably interconnected by a hinge pin and securable one to each of the container and the flap, lid or the like, and a precompressed spring supported at one end by the first hinge member and at its other end bearing against a unitary spring guide rod which acts on a bearing pin mounted at a fixed location on the second hinge member, the spring being supported at its said one end by means of a guide tube which receives one end of the guide rod and is mounted on a bearing edge provided at a fixed location on the first hinge member so that the bearing edge is spaced from the other end of the guide rod by a distance which is independent of the extent of precompression of the spring, the extent of such precompression being adjustable by movement of the guide tube relative to the bearing edge.

The invention is diagrammatically illustrated by way of example in the accompanying drawing, in which:—

Figure 1 is a sectional elevation through a spring biased hinge according to the invention, and

Figure 2 is an elevation taken in the direction of arrow II of Figure 1.

Referring to the drawing, a spring biased hinge comprises a movable hinge member 1 connected to a flap 2 and a fixed U-shaped

hinge member 3 connected to a container such as a freezer cabinet. The two hinge members are pivotally connected by a hinge pin 4.

For the purpose of weight compensation of the flap 2, a unitary spring guide rod 5 acts on, and transmits the force of a precompressed helical spring 6 to, a bearing pin 16 on the movable hinge member 1 associated with the flap. The upper end of the helical spring 6 bears on a shoulder 7, provided on the spring guide rod 5, by way of a collar 8 and the lower end of the spring 6 is supported by way of a washer 9 on a guide tube 10 which forms a slide bearing for the rod 5 and is provided with external screwthreads engaged in an internally screwthreaded cradle member 11. The cradle member 11 rests on bearing edges 12 provided at a fixed location on the hinge member 3. The force of the helical spring 6 can be adjusted by rotating the guide tube 10 relative to cradle member 11 and thus the distance between the bearing edges 12 and the upper end of guide rod 5 is independent of the extent of precompression of the spring. In the illustrated embodiment, a second and similarly mounted precompressed helical compression spring 6' is provided inside the spring 6 to supplement the force thereof.

At its upper end the spring guide rod 5 is received in a recess 13 in the lower end of a slide block 14. The slide block 14 has a curved recess 15 in its upper end whereby it receives and bears against the bearing pin 16, which is mounted at a fixed location on the hinge member 1 and the ends of which are received in respective recesses 17 (one of which is indicated in dotted lines in Figure 1) in side portions 18 of the U-shaped hinge member 3.

The slide block 14 is preferably formed of polyacetal resin or of a similar low-friction material. The recesses 17 define the limits of movement of the bearing pin 16 with respect to the fixed hinge member 3 when the pin 16 is carried along by the hinge member 1 during pivoting thereof about the hinge pin

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COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of  
the Original on a reduced scale

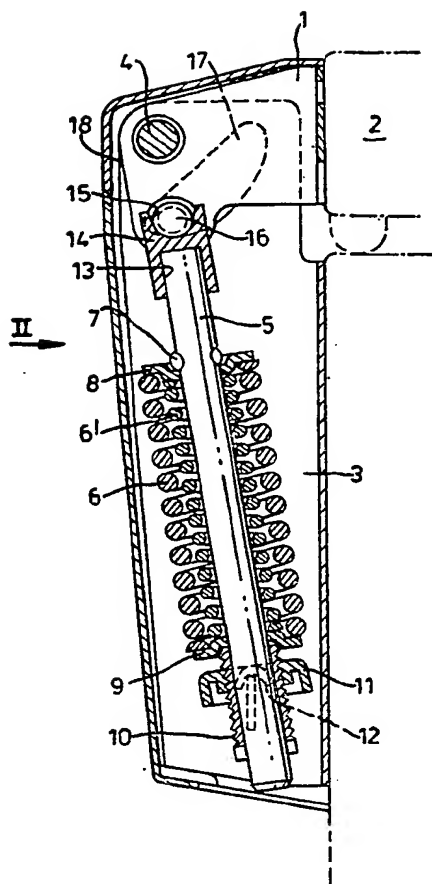


FIG. 1.

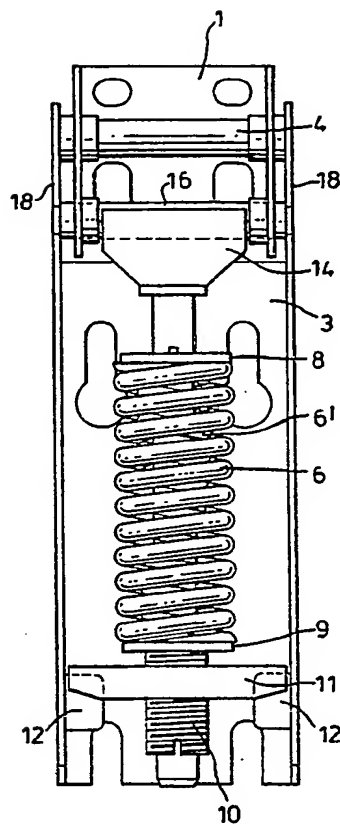


FIG. 2.